

Customer No.: 31561  
Application No.: 10/707,084  
Docket No.: 10722-US-PA

### REMARKS

#### Present Status of the Application

The Office Action objected the drawings (FIG. 1) because the Examiner cannot ascertain where the "first protrusion portion" and the "second protrusion portion" are in the figures.

As regards the prior art rejections, claims 1-5 and 10 stand rejected under 35 U.S.C. §102(e) as being anticipated by Yanamoto (U.S. Publication No. 2003/0047744; "Yanamoto" hereinafter). Claims 7-9 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Yanamoto as applied to claim 1 above, further in view of D' Evelyn et al. (U.S. Publication No. 2004/0124435; "D' Evelyn '435" hereinafter). Claims 11, 14-17, 19 and 21 remain rejected under 35 U.S.C. §103(a) as being unpatentable over Yanamoto in view of D' Evelyn '435 further in view of D' Evelyn et al. (U.S. Publication No. 2002/0155634; "D' Evelyn '634" hereinafter).

In response hereto, Applicants have amended claims 1, 4, 11, and 16. It is submitted that the amended claims patentably define over the prior art references, taken alone or in combination, and thus should be allowed. The entry of the proposed amendments and reconsideration of the present application are courteously solicited.

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**Response to Claim Rejections under 35 U.S.C. §102**

*Responsive to the rejections of claims 1-5 and 10 under 35 U.S.C. §102(e) as being anticipated by Yanamoto, Applicants have amended claim 1 and hereby traverse the rejections thereof for at least the reasons indicated hereinafter.*

With respect to claim 1 of the present invention at issue, as currently amended, it recites in part,

“An UV photodetector, comprising:

(...)

an active layer disposed on the second protrusion portion, wherein the first protrusion portion is constructed by the second protrusion portion of the ohmic contact layer and the active layer; and

a high-resistivity GaN-based interlayer, disposed on the first protrusion portion of the GaN-based semiconductor layer, and a material of the GaN-based interlayer comprising  $\text{Al}_x\text{In}_y\text{Ga}_{1-x-y}\text{N}$ , wherein  $x \geq 0$ ,  $y \geq 0$ ,  $1 \geq x + y$ ;

a first electrode, disposed on the GaN-based interlayer; and

a second electrode disposed on a portion of the GaN-based semiconductor layer except for the first protrusion portion,

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wherein a Schottky contact is formed between the high-resistivity GaN-based interlayer and the first electrode when a reversed bias is applied to the GaN-based semiconductor layer through the first electrode and the second electrode.”

(Emphasis added)

Applicants respectfully submit that, for *Yanamoto*, the single prior art reference, fails to teach each and every feature of Applicants' claim 1 at issue. Specifically, the limitations recited in claim 1 such as “a Schottky contact is formed between the high-resistivity GaN-based interlayer and the first electrode when a reversed bias is applied to the GaN-based semiconductor layer through the first electrode and the second electrode” are not disclosed by *Yanamoto*. In light of the foregoing, it is held that *Yanamoto* does not contain all the claimed features of the claim at issue, rendering Applicants' claim 1 novel and patentable.

Therefore, *Yanamoto* fails to teach each and every element in claim 1 of the present invention. Applicants respectfully submit that independent claim 1 is distinctive from the prior art reference, and thus should be allowed. For at least the same reasons, dependent claims 2-5 and 10 also patently define over the single prior art reference as a matter of law, for at least the reason that these dependent claims contain all features of their respective independent claim 1.

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**Response to Claim Rejections under 35 U.S.C. §103**

*Applicants courteously traverse both the rejections of claims 7-9 under 35 U.S.C. §103(a) as being unpatentable over Yanamoto as applied to claim 1 above, further in view of D' Evelyn '435 and the rejections of claims 11, 14-17, 19 and 21 under 35 U.S.C. §103(a) as being unpatentable over Yanamoto in view of D' Evelyn '435 further in view of D' Evelyn '634 because a prima facie case of obviousness has not been established by the Office Action.*

To establish a *prima facie* case of obviousness under 35 U.S.C. 103(a), each of three requirements must be met. First, the reference or references, taken alone or combined, must teach or suggest each and every element in the claims. Second, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine the references in a manner resulting in the claimed invention. Third, a reasonable expectation of success must exist. Moreover, each of the three requirements must "be found in the prior art, and not be based on applicant's disclosure." See M.P.E.P. 2143.